

# SHELBY GOLDEN

SCIENTIST AND MATHEMATICIAN

## CONTACT

 [www.linkedin.com/in/shelby-golden](https://www.linkedin.com/in/shelby-golden)

## EDUCATION

### Master of Science in Applied Computational Mathematics

Johns Hopkins University  
2021 - 2024

### Advanced EMT Certificate

St. Anthony's Medical Center  
Expired March 2020

### Bachelors of Science in Molecular, Cellular, Developmental Biology

### Bachelors of Science in Biochemistry

### Minor in Applied Mathematics Emphasis in Statistics

University of Colorado at Boulder  
2013 - 2017

## RELEVANT WORK EXPERIENCE

### Data Scientist I

September 2024 - Current

Yale School of Public Health

### Scientist

Feb 2023 - April 2023

### Senior Associate Scientist

July 2021 - Jan 2023

Allogene Therapeutics

Allogene develops off-the-shelf cancer and autoimmune disease treatments based on engineered donor T-cells called allogeneic chimeric antigen receptor T cells (AlloCAR T™).

#### Highlights:

- Produce and characterize 10-12 AAV each week for downstream AlloCAR T™ development in the Research department
- Wrote R-based data ingestion scripts for IND supporting projects
- Supported computational initiatives including DataLake and Donor Attributes
- Explored R-based automated hierarchal gating protocols for flow cytometry data

### Scientist II

Greffex, Inc.

Aug 2020 - Jun 2021

Greffex engineers vaccines and gene therapies using a patented fully deleted adenovirus vector. <https://www.greffex.com/>

#### Highlights:

- Engineer an Usher's disease gene therapy
- Engineer universal influenza and SARS-CoV-2 vaccines
- Scale vaccine production using adherent cell bioreactors
- Pseudo Virus Neutralization Assay development and execution (Lentivirus)

### Lab Researcher

Feb 2020 - July 2020

### Lab Researcher Technician

Feb 2018 - Jan 2020

National Jewish Health

Dr. Russell Bowler's lab studies COPD through both basic and clinical research studies. As the only lab personnel, I worked on many of Dr. Bowler's projects in different capacities.

#### Highlights:

- Designed and optimized cell culture, SDS-Page, and Western Blot protocols in collaboration with GSK
- Preparing a 6-month mouse smoking trial with lung tissue harvest
- Completed an array of assays including MSD, Western Blots, and PCR
- Wrote and optimized lab SOPs including one clinical blood processing protocol
- Collaborated with statisticians to enhance data quality
- Liaised ancillary projects with other labs and external institutions

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## LAB SKILLS

- Fast Protein Liquid Chromatography (AEKTA Avant)
- MSD (MesoScale)
- Flow Cytometry
- Fluorescent Microscopy (GFP and immunohistochemistry)
- Tissue Culture (i.e. scale using bioreactors, transfection, transduction, and stimulation)
- Bacterial Culture (i.e. transformation)
- Mouse Experiments (injections, blood collection, perfusion, lung harvest, BALF collection, Morris Water Behavior Tests)
- Genetic Engineering (i.e. restriction digestion, ligation, and gel cutting)
- Basic Techniques: SDS-Page, Western Blots, ELISA, Bradford, Chemiluminescence, spectrophotometry, RT-qPCR, qPCR, and PCR
- Compiled and optimize lab protocols and SOP's for Basic Research and Clinical Studies

## COMPUTATIONAL SKILLS

- R and R Markdown (~10 years)
- SAS (credentials on LinkedIn)
- Python
- MatLab
- Jupyter Notebook
- RedCap Database
- LaTeX
- GitHub
- Limited experience: SQL, HTML, CSS, and php

## RELEVANT WORK EXPERIENCE

### Lab Assistant

University of Colorado at Boulder

July 2015 - May 2017

Dr. Kevin Jones's lab studies the molecular mechanisms and therapeutic targets of down-regulated brain-derived neurotrophic factor (BDNF) in Down syndrome. I was the recipient of multiple competitive professional opportunity grants to work with Dr. Jones: the Linda Crnic Institute for Down Syndrome funded BURST grant and the UROP twice.

#### Highlights:

- PCR, tissue harvesting, and immunohistochemistry
- Morris Water Maze mouse behavior test
- Confocal fluorescent imaging and image analysis
- Design computational scripts in R to streamline data analysis of mouse experiments

### Teachers Assistant

University of Colorado at Boulder

Aug 2016 - Dec 2016

Cell Biology 1 course (MCDB 3135) and microscope lab (MCDB 3140)

- Set up experiments, graded assignments, and lectured
- Held weekly office hours for students

## MASTERS COURSES

### Multivariable Calculus and Complex Analysis

EN.625.250

### Statistical Methods and Data Analysis

EN.625.603

### Theory of Statistics I

EN.625.725

### Theory of Statistics II

EN.625.726

### Matrix Theory

EN.625.609

### Systems Biology

EN.605.755

### Modeling, Simulation, and Monte Carlo

EN.625.744

### Introductory Stochastic Differential Equations with Applications

EN.625.714

### Probabilistic Graphical Models

EN.625.692

### Data Science

EN.685.648

### Statistical Models and Regression

EN.625.661